

Remarks:

Claims 24, 25, 29, 53, 54 and 58 were objected to as being dependent upon a rejected base claim, but were found to be allowable if rewritten in independent form, including all of the limitations of the base claims and any intervening claims. Claims 24, 29, 53 and 58 have been rewritten accordingly. Claims 25 and 54 depend respectively from amended claims 24 and 53, and have accordingly not been amended. These amendments are purely of form, since the limitations of their parent claims were already incorporated in the amended claims as originally presented, and no limitations to the scope of claims 24, 29, 53 and 58 should be imputed because of this amendment.

The remaining claims were all rejected over various prior art references. An important distinction from the preferred implementation of the present invention is that each of the principal prior art references (Koike et al., Miller and Plugge et al.) generate sounds in response to actual vehicle or engine conditions in an on-board vehicle environment. The other prior art references, Redmann et al. and Takeuchi et al., disclosed specific sound synthesis techniques that were not limited to in-vehicle use, but were found to be applicable to the present invention only in combination with Miller, and then only to claims 19, 48, 20 and 49.

The preferred embodiment of the present invention is not intended to be used in a real vehicle environment. Rather, it is intended for computer-implemented games and simulations (specification page 1, lines 18-20, page 2, lines 21-22), and may be "executed by a general purpose microprocessor present in a desktop computer, laptop computer, video arcade game, and the like" (page 4, lines 23-27). The vehicle sounds are artificially synthesized ("artificially" meaning produced by a method other than the actual operation of a vehicle). Separate components of the vehicle sound can be independently generated and/or synthesized (the two terms in this context can be used interchangeably), then combined to produce a final sound (page 2, lines 28-31).

The purpose of the principal prior art, by contrast, is to produce vehicle sounds based upon actual engine inputs. Specifically, in Koike et al. the inputs comprise "a start sensor for detecting starting of the electric vehicle, a speed sensor for detecting a running speed of the electric vehicle, an accelerator opening sensor for detecting an accelerator opening of the electric vehicle, ..." (column 1, lines 51-57). In Miller an engine signal analyzer receives "one or more signal inputs from the operating vehicle engine" (column 2, lines 11-14). In Plugge et al. "sensors or transducers located in the engine compartment measure engine RPM and manifold vacuum. The sensors communicate instantaneous measurements of engine RPM and manifold vacuum to the sound processor and other audio processing components" (column 1, lines 48-52).

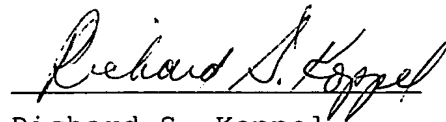
Independent claims 1, 8, 13, 30, 37 and 42 have been amended to require "artificially synthesizing, in a non-

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vehicle environment", the engine control parameters from which engine related sounds are generated (method claims 1, 8 and 13), or that the engine or vehicle control input "artificially synthesizes, in a non-vehicle environment", the engine or vehicle control parameters from which engine related sounds or vehicle sounds are generated (apparatus claims 30, 37 and 42). This clearly distinguishes these claims from the prior art in which vehicle sounds are generated based upon actual vehicle operating inputs. Nor would this distinction have been obvious, since the purpose of the principal prior art is to produce vehicle sounds which accurately represent actual vehicle operation, whereas the purpose of the invention embodied in the present claims is to artificially synthesize sounds based upon inputs that are produced in a non-vehicle environment. Conforming amendments have also been made to dependent claims 35, 41 and 43, while typographical errors in the specification have been corrected.

All of the claims are now believed to be in proper form for allowance, and a Notice of Allowance is respectfully requested.

Respectively submitted,



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